

Aquaculture in Alberta

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Ackenberry Trout Farms... Son's Aquaculture Passion Ripples Through Family



Ackenberry Trout Farms is located about 45 km directly east of Leduc.

In 1998 when Lorne Loudon graduated from the University of Alberta with a Bachelor of Science Degree, he followed his passion of working with fish. He was offered a position to work on an aquaculture farm near Leduc.

When the land changed hands, the owners relocated and started a state of the art aquaculture operation on land rented from Lorne's parents. Thus, the current fish farm began, near Miquelon Lake. Lorne was retained as a partner and employed to design and oversee the building and operations, relying primarily on his research and expertise. In 2000, the owners moved to Florida and wanted to sell the operation.

Lorne's passion for trout farming rubbed off on his dad, Horace. After working for the City of Edmonton for

35 years, he retired and together the family purchased CDL Aquafarms, changing the name to Ackenberry Trout Farms.

"Our first challenge was to make the facility more oxygen and energy efficient and have reliable backup systems in place," explained Lorne. "This included buying new, more efficient pumps, and updating the alarm system so if something goes wrong, the computer phones four different numbers. If the power fails, the alarm is also triggered and a 60-kilowatt backup generator automatically powers the farm. We also keep a liquid oxygen tank on hand during the year for supplemental oxygen or emergencies. The cost of \$3000.00 per year is worth every penny."

Ackenberry Trout Farms is a land-based recirculating fish farm that uses new technology to be environmentally friendly, reusing over 98% of its water every day. Because the system is closed, the farm can remain disease free by purchasing only disease free certified eggs. No other live fish ever comes into contact with the fish at Ackenberry. The fish culture system consists of 39,000 culture gallons, and over 65,000 total gallons including sumps and a settling pond. The pumps circulate close to 1000 gallons per minute of re-oxygenated, filtered water.

Ackenberry Trout Farms' family is a

multi-faceted, well-rounded team. Lorne has expertise and knowledge on all aspects of aquaculture, and is better known by some fish farmers and pond owners as the "fish doctor." Horace (dad) is the overseer of expenditures and looks after day-to-day details of the farming operation. Emily (mom), a marketing & advertising communicator, enjoys being the farm's market strategist. Fern, Lorne's wife, balances the team by providing valuable input, data entry and a helping hand at the Ackenberry farm.

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Ackenberry Trout Farms...

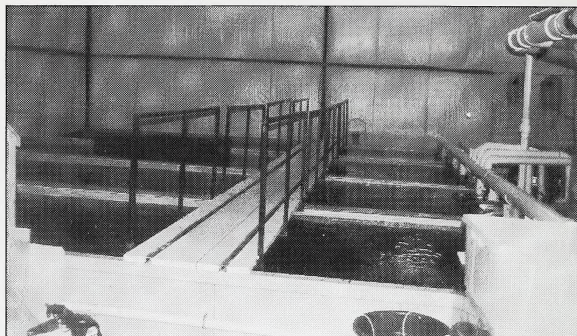
Son's Aquaculture Passion Ripples Through Family (Cont'd)

Emily, who works in Communications at East Central Regional Health Authority, says, "Discussions around the dinner table often sound more like a business meeting going over operational plans, marketing strategies and finances. During the busy spring season, this may be the only time the family has time to communicate."

Ackenberry Trout Farms' largest market is selling fish and equipment to pond owners for fishing entertainment. They sell 16 – 30 cm rainbow trout, brook trout, and triploid grass carp in an area extending from south of Edmonton, all the way up to Grande Prairie. Ackenberry also sells aeration and fountain equipment to

local pond owners. Other markets for Ackenberry Trout Farms include the sale of small fingerlings (5 – 10 cm) to other commercial trout farms (in lots of 5000 fish or more). Ackenberry also sells small fish to water quality control labs for bioassay analysis. This last market is the toughest because only fish weighing between 0.25 - 0.4 grams are accepted, and the labs require a year-round supply of these trout.

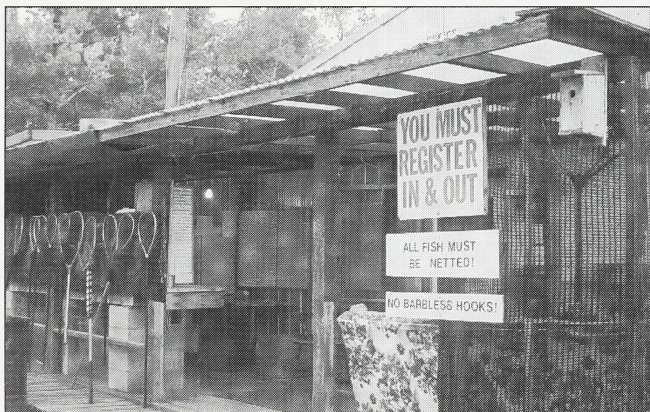
Lorne concludes, "Plans are



Ackenberry's indoor water recirculating trout rearing facility

underway to expand this year, accommodating a brood stock and a hatchery operation. This will allow us to raise and supply our own Alberta produced, disease free eggs and fingerlings." 🐟

U-fish'n ... from the Classroom to the Pond



Ever wondered what it would be like to have forty kids standing around a pond, fishing? Each year, in Alberta, busloads of youngsters take to the countryside to experience educational opportunities and ventures outside of the school. Students, near Red Deer, book in at Alta-View Trout Farm and learn all about fishing and aquaculture. Last spring, the manager, Doug Smith received three busloads of grade seven kids, all within one week. Most of the one hundred kids, teachers and parents caught fish, all brook trout and averaging one kilogram with some reaching one and a half kilograms.

Imagine, many new fishermen surrounding a pond, flailing rods and racing around with nets. Kids were running left and right. Only one person got hooked, in the pants... remarkable when you think of that many fishing. At one time 15 people could be seen casting their lines from a floating pier. Total cost for the school came to just over a couple of hundred dollars a busload. The added bonus was being able to take their catch home for the table.

Positive results were achieved, students learned the art of successful fishing, then how to clean and preserve their catch. The fish were bagged in ice. This is one experience all kids in our province should have an opportunity to witness and try. Next year, think about those kids in the classroom and get them outdoors, fishing. 🐟



U-Fly Fish for Trout at M & A Ponds Near Slave Lake

Dave Shupac of Slave Lake had a dream about catching huge rainbow trout from his own ponds. As a matter of fact, Dave figured his family might even make some supplemental money from U-fly agri-tourism, to offset stocking and feeding costs. People tired of unproductive lake fishing, could stop by his ponds and successfully fly fish, without the need of an angling license.

His wife Monica and son Andrew manage Dave's two fishponds. Hence the name M & A Fly Fishing began. Originally stocked in 1998 with small rainbow trout, the ponds last year were producing fish up to 6 pounds, sometimes even 10 lb. "Just imagine," notes Dave, "what it feels like to hook one of those lunkers on a fly."

The ponds are open seven days a week, and cost only \$10 for fishing, including taking home two fish, whatever size. You can keep any additional fish for an extra \$3 each. Dave says his prices are better than a round of golf and you're bringing home quality food for the table.

Dave has customers regularly driving in from over two hours away. Just head towards Slave Lake, fish for a few hours, and relax ... away from the hustle & bustle! You can choose to fish from the pier or shore or bring a



These beautiful, scenic ponds are located in the Mitsue area; just 15 minutes drive east of Slave Lake.

belly boat. When you're finished, nothing but fond memories will remain. If you forget to bring equipment, you can rent or purchase gear and flies, and even receive training from Dave on how to fly fish.

Keeping good oxygen in his ponds has been a concern for Dave Shupac. This year he unfortunately learned the hard way. The aeration system he put in could not cope with last year's long winter and both ponds suffered major winterkill. Dave recently restocked his ponds with catchable fish for this year and added continuous electric aeration, with proper equipment. "Although there might not be any lunkers left, later this summer there should be some respectable fish to catch" says Dave. Then again, perhaps some of those monster rainbows could have overwintered!

Industrial Park, near the Alberta Plywood mill (about two hours north of Edmonton). M & A's fishing spot is about 25 km east of the town and 4 km east of Highway # 2; just follow the signs. The fish taste great.




You will encounter a number of signs off highway 2, directing you to M & A's fly-fishing ponds.



Andrew, one of the M & A partners, catching a fine pond raised rainbow trout.

Where do you go? The ponds are located east of Slave Lake in the Mitsue

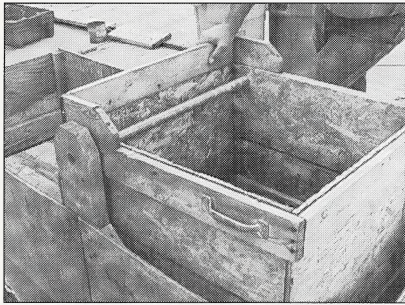
For more information, call Monica or Dave at (780) 849-5169. You can also Email them at uflyfish@telusplanet.net 

Size Grading Fish!

Why Commercial Fish Farmers Grade Fish?

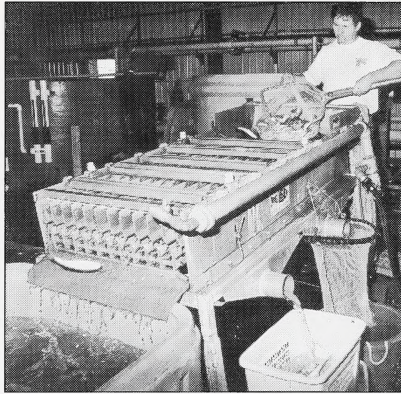
Gradating fish is one of many important procedures done by commercial fish farmers and it's a practice that retail and recreational fish farmers should understand.

Different fish from the same group naturally grow to different sizes at different rates. This is due to their metabolism, behavior and physiology. During the production cycle, fish farmers need to make sure that fish are sorted or "graded" with regularity. Trout are usually graded about four times during the period from fingerling to market size. The main reason behind all the hard work is that fish, whether for food or pond stocking, are fed and sold relative to size. Larger fish cost more to reach their size, and the bigger, often more aggressive fish, eat at the expense of smaller ones in the same tank.



Homemade trout grading box used at Chin Coulee Trout Farm, near Taber.

Grading is a simple, but time consuming chore. The least amount of grading is desirable, since it can be stressful to the fish. When fish are at too high a density and need to be thinned out, this is also a good time to grade the fish. Farmers will start grading out the smallest fish and progress to the larger sizes. Fish are crowded, pumped or moved net by net, into the grading area, which they can pass through if they are small



Clay Boyes, Lethbridge Community College, uses a commercial fish grader that sorts three fish sizes at a time.

enough to fit between the bars. The bar width is spaced according to the desired size of fish. Thus, a 15 cm trout will not fit through bars that are 8 mm apart. Often the grader is floating in a tank next to a tank holding the fish to be graded. The grading tank water is lowered and the fish are moved out and placed into the grader. Any larger fish that can't escape are then placed into another tank.

For large orders of fish of a certain size, the commercial fish farmer will probably weigh 100 fish of known length and average their weights. This is then correlated to a number of fish being sold. If 10,000 fish are ordered, the customer will receive so many kilograms of fish, which have been recently graded to a certain length.

Fish farmers selling various fish sizes must grade each successive group of fish. This is most often the reason why farmers do not sell fish in each inch group, but usually in 2" groupings. If you are buying fish for your pond, it is recommended by the Alberta Fish Farmers Association (AFFA) that you spend the time to check a few of the fish being stocked. There might be an

occasional larger or smaller fish, but you will probably find most commercial fish farmers will err on the side of the customer by providing them with fish slightly larger than what has been requested.

Graders can be purchased or can be made at the farm without too much difficulty. Grading gear can be as simple as constructing a box with bars. Dan Menard of Smoky Trout Farm advises "try making bars from aluminum. We tried wood and smaller diameter aluminum with less success." Most farmers build a number of these simple boxes instead of trying to make a complicated adjustable grader. Other, larger commercial ventures, resort to expensive adjustable graders that automatically grade a variety of fish size. 🐟



Dan Watson of the Aquaculture Section holding a homemade bar grader made by Dan Menard of Smoky Trout Farm.

Where's the Water!

How To Fill My Dugout

By Joe Harrington & Bruce Crowder, Agricultural Water Specialists, AAFRD, Lethbridge



The drought of the mid 1980's and the current dry conditions in the prairies have reaffirmed the importance and value of water to rural people. Dry wells and dugouts, crop disasters and poor pasture conditions are common issues that plague prairie farmers.

If you're thinking about where or how to get water to fill your pond or dugout or need more water to keep your fish healthier for the year, then how do you get water, and how much do you need for healthier fish? For the long term, consider snow catchment methods, such as snow fences or shelterbelts, and the use of interceptor ditches to collect runoff. If your dugout/pond has a history of draining quickly, then a seepage problem might exist - one that needs to be corrected. Amalgamating water sources whether from other dugouts, wells, sloughs, creeks, canals or lakes could be your alternative. Renting pumping equipment from AAFRD or your municipality is a short-term solution to these drought stricken times.

Alberta Agriculture, Food and Rural Development (AAFRD) currently own pumping equipment, available for rent. The AAFRD Water Pumping Program maintains a large inventory of aluminum conveyance pipe and pumps, which are distributed throughout key locations in the province. There are also several municipalities in the province that offer pumping equipment for rent. You may want to check with your local municipality.

When an individual wishes to rent the equipment, he or she contacts the closest distribution location or calls (780) 422-5000 in order to make out an application for equipment

rental. At that point the applicant is put on a delivery list. AAFRD staff then delivers the equipment to your location. It is the responsibility of the renter to supply a power unit (tractor with PTO), set up the equipment, operate the equipment and "take down" the equipment. AAFRD staff then picks up the equipment.

An average dugout can be filled within one day if the distance is not great (less than 2 km). Larger pumping projects of up to 15 km are possible but require significant effort. The cost of the pump is \$200/day (24 h) with each additional pump costing \$100/day. The pipe is \$300/day for the first mile and \$150/day for each additional trailer (mile of pipe).

Until November 15, 2002, the above-mentioned rates have been reduced by 50% in order to help farm producers cope with the recent drought conditions.

People wishing to use pump systems should first be aware of all legal requirements, such as, right of way easements and temporary diversion permits (water license). To obtain these permits, contact your local municipality and Alberta Environment, respectively.



For more information on dugout water management, contact Joe Harrington at (403) 381-5846 in Lethbridge or call any of the Water Specialists with Alberta Agriculture, Food & Rural Development in Red Deer, Edmonton or Grande Prairie. 🐾

Triploid Grass Carp – for Weed Control In Lethbridge's Henderson Lake

In the past, applications of chemical herbicides helped control Henderson Lake's aquatic vegetation problems. This summer marked the first year that herbicides were not used. Instead, 1500 sterile grass carp (also called white amur) were introduced to take a bite out of the prolific aquatic vegetation. The grass carp diet consists entirely of aquatic plants. It, like many of us, has a discriminating palate, selecting specific types of vegetation and/or filamentous algae to feed on. Grass carp are voracious feeders. Under optimal conditions they can consume up to twice their body weight in vegetation per day.

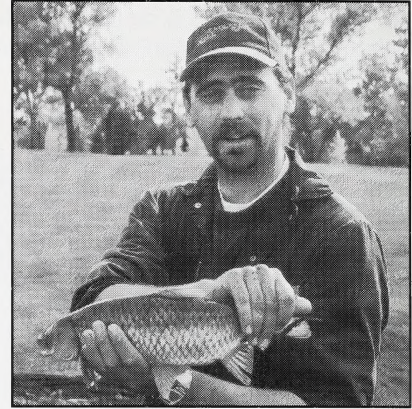
The reason for introducing grass carp to Henderson Lake is to control the abundant vegetation in a more environmentally friendly way. According to John Derksen of the Lethbridge Community College, "the grass carp are sterile and therefore can't reproduce. Even though efforts have been made to contain the fish in the lake and avoid escapement, the fact that these fish are sterile ensures they won't accidentally become established in any natural waters."

For the past three summers, physical, chemical and biological data has been collected from Henderson Lake. This cooperative venture between the City of Lethbridge Parks Dept. and the Lethbridge Community College resulted from recent data collected, identifying causes and solutions

to the prolific vegetation growth and foul odors that, at times, affect the lake's aesthetic beauty.

Effectiveness of this biological way of vegetation control will be monitored. The percentage of carp mortality will be assessed using radio telemetry. Next year another 500 grass carp will be stocked in the lake, followed by another 500 fish the year after. At the end of three years of data collection, the success of the carp introduction will be evaluated.

With proper management and information it's hoped that the City can put away the chemical herbicides for good, while visitors to Henderson Lake sit back and enjoy watching this timid fish snacking away on aquatic vegetation near the waters surface. ➤



**JOHN DERKSEN, MSc., Fisheries and Aquatic Biology
Instructor, Lethbridge Community College**

Keeping Ospreys Away ... Using Plastic Pink Flamingos

Who'd have thought that plastic flamingos, the kind you have as a lawn ornament, would keep ospreys away from a trout pond? Well, that's just what happened to Theresa Hann, near the Crowsnest Pass.

Theresa was watching an osprey feed daily on her fishpond, to the extent that most of her 150 stocked rainbows were cleaned out, and the birds were starting to build a nest in the adjacent power pole.

Theresa Hann called her local power lineman from Aquila, who knew that ospreys, protected birds, might be scared off by decoys, perhaps even flamingos. A few bright pink plastic

flamingos were bought at the local hardware store and placed at water's edge. The power lineman fastened another decoy to the power pole, under the nesting ospreys.



Two pink flamingos still stand guard at the Hahn's trout pond, near Lundbreck.

Initial results were impressive: the ospreys dove and screeched at the power pole flamingo, then decided to move their residency further away. The shoreline flamingos seemed to help, but only when routinely moved around. As the ospreys (living elsewhere now) were still imprinted on this good fishing hole, they continued to fly by during their regular foraging excursions. When the pink flamingos are not moved, the ospreys continue fishing! ➤

Alberta's Aquaculture Industry

Update on the Aquaculture Section

Effective April 2002, the aquaculture section of Alberta Agriculture, Food & Rural Development (AAFRD) began a new reorganized strategy. In line with the Industry Development Sector, this provides emphasis on value adding and working to improve new potentials.

Ken Gossen takes over from Ellen Frombach as head of the diversified livestock branch, now managing aquaculture, bison, and elk/deer farming. During this reshuffle, aquaculture lost two positions through retirement. Aquaculture licensing has moved to the compliance service section, under John Girvan. His background in regulations and licensing will assist in streamlining legislation.

Research, training and promotion will continue through current staff. Assistance in market development, identified as a need for the industry, will be available through the department's business and innovation branch.

Restricted Area Review – Update

In the spring of 2001, Alberta Agriculture, Food and Rural Development and Alberta Sustainable Resource Development agreed to a formal review of the Restricted and Prohibited Areas of the province. Historically, the Restricted Area is designated to limit aquaculture activities and protect wild salmonid species in the "green zone" watershed of the province, whereas the Prohibited Area has been established to protect the waters of the Provincial Raven Brood Trout facility.

This review attempts to answer the following questions: 1) Is the use of Restricted and Prohibited Areas valid? 2) Are the boundaries of the Restricted and Prohibited Areas valid? 3) What types of aquaculture activities fall under the Restricted Area? and 4) What species should be permitted in the Restricted Area under various aquaculture and stocking licenses?

A comprehensive report is complete, with recommendations submitted to a Review Committee. The findings will soon be made available to "stakeholders" throughout the province. Stakeholders will be invited to participate in a review of the report recommendations in early December.

Update on Research & Development

Three projects are currently underway. They include silver carp trials for algae control, aquaponics, and alkaline and pH tolerant trout strains.



Curt McNaughton, President of the AFFA (centre) presenting plaques to Duncan Lloyd (right) and Svat Jonas (left) at the last annual meeting.

The plaques were in appreciation for their outstanding contributions to Alberta's aquaculture industry.

Alberta Fish Farmers Association

The Alberta Fish Farmers Association (AFFA) held their 2002 Annual meeting in Red Deer, on April 21st. As a result, a new Board of Directors was put into place, including: Curt McNaughton - president, Lorne Loudon - vice president, Mark McNaughton - secretary/treasurer, and four directors: Dave White, Clay Boyes, Dan Menard, Terry Schroeder.

AFFA members attended a summer workshop in Calgary to help develop a 15-year vision for sustainable aquaculture in Canada. The result of this and eleven other regional workshops provided stakeholders' input, necessary for preparing the draft "Vision." The Office of the Commissionaire for Aquaculture Development organized this workshop (for the Prairies) under direction of the Minister of Fisheries and Oceans.

The AFFA agreed to assist with new fish species research, such as silver carp and Eagle Lake (Blackwater) rainbow trout and possibly large mouth bass. Hats off to the AFFA for having another successful winter with "Raising Fish in Your Dugout or Pond" seminars throughout Alberta. Plans are underway to continue with "Raising Fish" courses throughout Alberta this coming February.

The AFFA wish to thank those who have supported the association in the past and continue to do so. Association memberships are now available for only \$10.00 a year. You receive a bumper sticker, and a yearly letter updating you on AFFA meetings, events, and progress on AFFA issues.

The Association is representing you. If you would like a voice, please contact Mark McNaughton at (403) 368-2172 or fax (403) 368-2174, or any other member to get your membership.

Curt McNaughton, President ➤

COURSES, PUBLICATIONS & EVENTS

Courses

Aquaculture courses to be offered this season include: Raising Fish in Your Pond (at various Alberta locations in February), Basic Principles of Aquaculture (in Red Deer during mid March), and an Aquaponics Workshop (tentatively set in Brooks during April). Broodstock Management is scheduled for November of 2003.

To obtain more information on these courses contact: Eric Hutchings, of AAFRD's aquaculture section in Lethbridge, toll free by dialling 310-0000, then 381-5574 or dial direct with area code (403) 381-5574.

Publications

A selection of aquaculture fact sheets, publications and videos are available on a short-term loan through the aquaculture section in Lethbridge. The contact person is Judy Chow at (403) 381-5170.

The following government publications are also available on Internet (Ropin' the Web) or by calling AAFRD's Publications Branch (1-800-292-5697):

Aeration of Dugouts or Ponds with Compressed Air. Agdex 716 (B36)

Algae Control in Ponds. Agdex 485/716-2

Aquaculture Profit\$... for a rainbow trout intensive fingerling enterprise. Agdex 485/821-1

Biological Weed Control in Alberta using Triploid Grass Carp. Agdex 485/641-1

Constructing Dugouts for Fish. Agdex 485/716-1

Fish Culture Licences. Agdex 485/84-1

Freshwater Aquaculture Industry. Ag -Venture series Agdex 485/830-1

Predator Damage Control. Agdex 485/685-1

Screening Your Fish Pond. Agdex 485/87-1

Events

Nov. 14-16 NMFS HACCP Course, Seattle, WA. Contact: Karla Ruzicka Phone: (978) 281-9124 Fax: (978) 281-9125 Web: seafood.nmfs.noaa.gov/training.htm

January 2-5, Canadian Conference for Fisheries Research, Ottawa, Ontario, Canada. Meeting for over 50 years, the Canadian Conference for Fisheries will be in early January. The conference is a forum where researchers and graduate students can

present and discuss the latest advances in freshwater and marine fisheries research.

January 20-22, 2003, Explore Direct, Red Deer, Alberta. A conference for those marketing rural Alberta products direct to consumers. For more information, contact Kerry Engel by email at kerry.engel@gov.ab.ca or call toll free at 310-0000 then dial (780) 349-4466

February 18-21, 2003, Aquaculture America 2003. Louisville, Kentucky. This year's Aquaculture America conference, "New Frontiers in Aquaculture," is the only national aquaculture conference & expo held in the United States. The National Aquatic Association, U.S. Aquaculture Society and USASA join together to produce an informative gathering. Contact the conference manager, World Aquaculture Society, (760) 432-4270 worldaqua@aol.com Event Web site: www.was.org 

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Editor's Notes

It is with deepest regret I inform our readers that Ron Beck, senior aquaculture biologist with Alberta Agriculture passed away on October 5th.



Ron was the lead researcher in the triploid grass carp program. He was also instrumental in introducing other new fish species for Alberta's aquaculture industry. He was an active member on many aquaculture committees, both federal and provincial.

His research included: new species introductions, disease control, aquaponics, recirculating aquaculture technology, and industry development. He spearheaded many education and training programs for the private aquaculture industry within Alberta and the Lethbridge Community College. His concerns for wild fishstock integrity and its coexistence with aquaculture were always

paramount. Our department, the Alberta Fish Farmers Association and many other government agencies, public interest groups, and past students will miss Ron, his logic, dedication and his team playing skills. 

This will be the only issue of Aquaculture in Alberta produced in 2002. If you would like to submit articles, provide us with input, or be placed on the mailing list, contact the aquaculture section in Lethbridge at (403) 381-5170.

The Internet address for Alberta Agriculture, Food & Rural Development's "Ropin' the Web" Home Page is www.agric.gov.ab.ca. The home page contains aquaculture information, accessed by first clicking on the feature "livestock/animals" and then "aquaculture."

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